

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Algebra 2 and Trigonometry Honors  
Course Pre Exam**

**INSTRUCTIONS: This exam WILL NOT count toward your grade. You are taking it so that I have a better idea of your prerequisite skills so that I can teach you more effectively. DO NOT GUESS!! If you do not know how to do a question, LEAVE IT BLANK!!**

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

**Solve.**

- 1) Write the English phrase as an algebraic expression: 8 less than the product of a number and 3. Let  $x$  represent the number.

A)  $3x - 8$

B)  $3 - 8x$

C)  $8x - 3$

D)  $8 - 3x$

**Simplify the expression.**

2)  $6x - [8 - 5(9x - 10)]$

A)  $-39x - 58$

B)  $51x - 42$

C)  $-39x - 42$

D)  $51x - 58$

**Use the five-step strategy for solving word problems.**

- 3) One number is 4 less than a second number. Twice the second number is 6 less than 4 times the first. Find the two numbers.

A) 6 and 10

B) -11 and -7

C) 7 and 11

D) 8 and 12

- 4) The length of a rectangular room is 2 feet longer than twice the width. If the room's perimeter is 160 feet, what are the room's dimensions?

A) Width = 52 ft; length = 108 ft

B) Width = 31 ft; length = 64 ft

C) Width = 26 ft; length = 54 ft

D) Width = 39 ft; length = 41 ft

**Solve the formula for the specified variable.**

5)  $Ax + By = C$  for  $y$

A)  $y = \frac{C - Ax}{B}$

B)  $y = \frac{Ax - C}{B}$

C)  $y = \frac{C + Ax}{B}$

D)  $y = \frac{A - Cx}{B}$

**Simplify the exponential expression.**

6)  $(-5x^4y^{-5})(3x^{-1}y)$

A)  $\frac{-2x^3}{y^4}$

B)  $-15x^3y^6$

C)  $\frac{-15x^5}{y^6}$

D)  $\frac{-15x^3}{y^4}$

7)  $\left(\frac{8x^{-5}y^3}{2xy^{-3}}\right)^{-3}$

A)  $\frac{x^{18}y^4}{64y^{18}}$

B)  $\frac{x^{18}}{64y^{18}}$

C)  $\frac{x^{12}}{64y^{18}}$

D)  $\frac{4x^{18}}{y^{18}}$

Perform the indicated operations.

8)  $(4x^2 - 3x - 3) - (-6x^2 + 2x - 9)$

A)  $10x^2 + 5x - 6$

B)  $10x^2 - 5x - 6$

C)  $10x^2 + 5x + 6$

D)  $10x^2 - 5x + 6$

9)  $(x + y)(x^2 + 4xy - y^2)$

A)  $x^3 + 5x^2y + 3xy^2 - y^3$

C)  $x^3 + 4x^2y + 4xy^2 - y^3$

B)  $x^3y + 4x^2y - xy^3$

D)  $x^3 + 4x^2y - xy^2$

Factor completely, or state that the polynomial is prime.

10)  $18x^2 - 69x + 60$

A)  $3(2x - 1)(3x - 20)$

B)  $3(2x - 5)(3x - 4)$

C)  $3x(20x - 5)(x - 4)$

D) prime

Solve the polynomial equation.

11)  $3x^2 = 4 - 4x$

A)  $\{\frac{2}{3}, -2\}$

B)  $\{0, -\frac{4}{3}\}$

C)  $\{0, \frac{4}{3}\}$

D)  $\{\frac{3}{2}, 2\}$

Perform the indicated operations. Simplify where possible.

12)  $\frac{x^2}{x^2 - 9} \cdot \frac{x^2 + 7x + 12}{x^2 + 4x}$

A)  $\frac{x}{x - 7}$

B)  $\frac{x - 3}{x}$

C)  $\frac{x - 7}{x}$

D)  $\frac{x}{x - 3}$

13)  $\frac{x}{x + 1} + \frac{3}{x - 1}$

A)  $\frac{x^2 + x + 3}{(x + 1)(x - 1)}$

B)  $\frac{x^2 + 2x + 3}{2x}$

C)  $\frac{x^2 + 2x + 3}{(x + 1)(x - 1)}$

D)  $\frac{3x}{(x + 1)(x - 1)}$

Find the square root if it is a real number, or state that the expression is not a real number.

14)  $\sqrt{\frac{49}{4}}$

A) 4

B) 12

C)  $\frac{7}{2}$

D)  $\frac{7}{3}$

Perform the indicated operation and, if possible, simplify. Assume that all variables represent positive real numbers.

15)  $3\sqrt{2} + 2\sqrt{50}$

A)  $13\sqrt{2}$

B)  $-13\sqrt{2}$

C)  $5\sqrt{2}$

D)  $2\sqrt{2}$

## Answer Key

Testname: A2THONORS OPENING DAY TEST

- 1) A  
Diff: 0  
Objective: (1.8) Chapter Test
- 2) D  
Diff: 0  
Objective: (1.8) Chapter Test
- 3) C  
Diff: 0  
Objective: (1.8) Chapter Test
- 4) C  
Diff: 0  
Objective: (1.8) Chapter Test
- 5) A  
Diff: 0  
Objective: (1.8) Chapter Test
- 6) D  
Diff: 0  
Objective: (1.8) Chapter Test
- 7) B  
Diff: 0  
Objective: (1.8) Chapter Test
- 8) D  
Diff: 0  
Objective: (5.8) Chapter Test
- 9) A  
Diff: 0  
Objective: (5.8) Chapter Test
- 10) B  
Diff: 0  
Objective: (5.8) Chapter Test
- 11) A  
Diff: 0  
Objective: (5.8) Chapter Test
- 12) D  
Diff: 0  
Objective: (6.9) Chapter Test
- 13) C  
Diff: 0  
Objective: (6.9) Chapter Test
- 14) C  
Diff: 0  
Objective: (7.1) Find Square Root of Perfect Square
- 15) A  
Diff: 0  
Objective: (7.8) Chapter Test